Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
OPTIONS FOR 470-512 MHz SPECTRUM	)	PS Docket 13-42

COMMENTS OF THE CITY OF BURBANK

The City of Burbank ("Burbank") hereby submits the following comments in response to the Federal Communication Commission's ("Commission's") *Public Notice*, DA 13-187 (February 11, 2013), concerning implementation of Section 6103 of the Middle Class Tax Relief and Job Creation Act of 2012 (the "Act") as it applies to the 470-512 MHz band (the "T-Band"). The date of enactment was February 21, 2012.

Burbank has extensive experience with public safety radio communications. Burbank owns and operates its own radio system, and relies on its water and power utility (Burbank Water and Power) to manage it. Burbank's radio system serves not only first responders (Police Department and Fire Department) but also those that provide them with logistical support (such the Public Works Department and Burbank Water and Power municipal utility). Almost all of Burbank's assigned frequencies lie within the T-Band.

On March 30, 2011, by invitation, Burbank (Mr. Greg Simay) testified before the full Committee on Homeland Security on the question, "Are the public safety communications needs of our first responders being met?" In both its written and oral testimony, Burbank supported allocating the D block for public safety. But Burbank also stated, "However, auctioning the public safety spectrum below 512 MHz, as proposed [in then] H.R. 607, would be highly

problematic for LA County. The UHF channels for voice interoperability are all under 512 MHz."

Burbank is a founding member (2003) of a very effective interoperable radio network, the Interagency Communications Interoperability System Joint Powers Authority ("ICIS"). Within Los Angeles County, users of the ICIS system include roughly half (44%) of the municipal fire departments, 14 law enforcement agencies, the Red Cross, Bob Hope Airport, the Los Angeles Interagency Metropolitan Apprehension Crime Task Force, and various public works departments and water and power utilities. ICIS relies upon the T-Band and has expressed serious concerns with Section 6103 in its own, separate response to the Commission.

Burbank is also a member of Los Angeles Regional Interoperable Communication System Authority ("LA-RICS") a joint power authority formed by the City of Los Angeles, County of Los Angeles and more than 80 other municipalities and public sector entities. Burbank serves on LA-RICS' 17-member governing board as well as on several subcommittees. LA-RICS has been working on a multi-agency, interoperable radio communications system for the Los Angeles metropolitan area and is currently in negotiations with a prospective vendor. LA-RICS had been planning for its voice communications platform to operate in portions of the T-Band. Although LA-RICS is not itself a frequency licensee, it intends to use frequencies provided by its member jurisdictions. LA-RICS has expressed serious concerns with Section 6103 in its own, separate response to the Commission.

Section 6103 does not provide a viable implementation path for the best and most efficient uses of the T-Band. Section 6103 provides that, nine years after the date of enactment or earlier, the Commission shall reallocate the T-Band spectrum that is currently used by public safety agencies. More specifically, the Commission shall:

- Within nine years, reallocate the T-Band and begin competitive bidding to grant new initial licenses for use of the T-Band spectrum.
- Make proceeds from the auction of the T-Band spectrum available to the Assistant Secretary of Commerce for Communications and Information, who may make grants as necessary to cover the costs of relocating public safety agencies from the T-Band.
- Complete relocation of public safety agencies from the T-Band Spectrum two years or less after completion of the competitive bidding,

Therefore, relocation would need to be completed on or before February 21, 2023.

Burbank recognizes that the allocation of a given band of spectrum to its most effective uses, carried out in the most spectrum-efficient manner, is a major responsibility of the Commission. Burbank's response assumes that a reallocation of the T-Band, at least in the long run, would represent a more effective allocation of spectrum in view of emerging technologies, marketplace signals and the communication companies responding to them. Burbank's remarks are therefore aimed at its vision of an implementation path that might best balance the interests of those currently using the T-Band with those who may wish to move to the T-band in the future.

Let's first consider why Section 6103, as presently written, does not provide a viable implementation path for migrating public safety agencies out of the T-Band. Several features of Section 6103 are problematic for the Commission itself, as distinct from any public safety agencies that may be affected by them:

- Section 6103 specifically identifies *only* public safety agencies as being required to leave the T-band. But, various commercial enterprises also make use of the T-Band, with their

assigned frequencies often interspersed with those of the public safety agencies. To permit effective use of the newly-vacated portions of T-Band, the Commission would need to remove commercial users. Perhaps for that reason the Commission could assert the administrative authority to relocate commercial users. But, it is nevertheless an oversight in the current version of Section 6103 that non-public safety users are not specifically identified.

- Smaller public safety agencies have little or no internal logistical support. They depend on the external support provided by municipal public works departments, water and power utilities, etc. If public safety agencies leave the T-Band, the Commission faces the potential problem of finding similar, additional spectrum for these supporting agencies. (Note: President Obama recently met with utility executives and restated his interest in designating utility workers as first responders when restoring service after major storms.) Alternatively, the public safety agencies may have to invest in expensive dual-band radios, an expense that may lead to additional reimbursement claims from the auction proceeds.
- Two years is not enough time between when the Commission receives the auction proceeds, and when public safety agencies have to vacate the T-Band. In fact, when we take into account the time to award spectrum relocation grants, the maximum time allowable is likely to be significantly less than two years. Also likely is pressure to speed up the granting process or to perhaps advance funds to public safety agencies well in advance of the auction. In either case, the Commission and other federal agencies may find the reimbursement process to be more complicated than originally intended.

- Section 6103 does not specify the band that public safety agencies would be migrating to. This leaves the Commission in the awkward position of not knowing if it in fact has the necessary spectrum to enable a migration from the T-Band without compromising public safety communications. And we should keep in mind that spectrum is not only needed for communications using a network of radio towers. It's also needed for point-to-point communications that allow a firefighter trapped in a burning basement (for example) to communicate with a nearby fellow firefighter outside the building. Owing to building conditions, the trapped firefighter's radio may not have the signal strength to access a radio tower several miles away, but enough signal strength to reach a firefighter only a hundred feet away. And where the metropolitan area of Los Angeles is concerned, it's worth noting that the Commission had earlier assigned the T-Band to public safety because of the lack of sufficient spectrum elsewhere in the region.

Section 6103 would be problematic for public safety agencies, even if sufficient spectrum was known to be available. For the majority of public safety agencies, the relocation deadline of February 21, 2023 (or sooner) is unlikely to coincide with the agencies' natural radio replacement cycles. Some capital investments will be retired prematurely and the rest of their useful expected life cycle would therefore be wasted. If the replacement spectrum is a significantly higher frequency range (700/800 MHz, for example) then additional sites will be needed, and it's very unclear if they could be integrated into a broadband network by 2023. Burbank estimates its own migration costs to be about $15 million, which include radio replacements and site additions/upgrades but excludes possible spectrum acquisition.

Public safety agencies will eventually replace their current radio systems and, if the technology allows, perhaps integrate within a broadband network that allows joint sharing of tower sites. When that replacement occurs, a migration to another spectrum would represent an incremental cost to the agency, considerably less than if it had to replace its system prematurely. As a result, the federal government's relocation cost reimbursements would be considerably less as well.

The National Public Safety Telecommunications Council ("NPSTC") recently issued a comprehensive report on the T-Band (NPSTC Report, dated March 15, 2013). Its findings concerning the T-Band provisions of Section 6103 can be summarized bluntly: "NPSTC believes implementing the T-Band legislation is not feasible, provides no public interest benefit, and the matter should be re-visited by Congress." Burbank (along with ICIS and LA-RICS) agrees with NPSTC that the T-Band provisions of Section 6103, in its current form, are highly problematic and will pose major implementation problems for the Commission as well as the nation's public safety agencies.

A re-tooled Section 6103, reflecting the concerns of all affected parties, could provide a viable implementation path for the best and most efficient uses of the T-Band. Section 6103 could be simply repealed. Evolving communication technologies and economics could be allowed to set the pace of any T-band migration. But this hands-off approach risks passing over short-term opportunities to free up the T-band by making it more efficient.

Burbank thinks it's worth the attempt to consider new T-Band provisions that provide a workable implementation path, one taking advantage of current technology as well as likely future developments. Under this alternative, Congress would suspend the current T-

band provisions of Section 6103 while at the same time directing the Commission to propose a revised set of T-Band provisions.

As the current version of Section 6103 forcefully reminds us, "the devil in the details" can undermine worthy objectives. A revised implementation path has the best chance of expelling these "devils" if it takes local and regional conditions into account. Burbank believes it has identified a strategic approach that would be compatible with a wide variety of specific circumstances facing public safety agencies**:**

Create space on the T-Band by mandating all users to operate on a narrower bandwidth. Once that is accomplished, migrate users to new frequencies within the T-Band so that roughly half of the T-Band is freed up for auction. Auction this newly-created space and retain the proceeds in a dedicated fund to assist the eventual relocation of T-Band users to a new spectrum. Require radio voice traffic to operate on a bandwidth that is one-half to one-quarter the size of those currently in use -- that is, move from a 12.5 kHz or 25.0 kHz bandwidth to the equivalent of a 6.25 kHz bandwidth, under P-25, Phase II standards. Although radios would need replacing, the rest of the radio system (tower sites, antennas and associated electronics) would remain unchanged because it would still be operating within the same T-band frequency range. Before Section 6103, the Commission had been moving in direction of requiring ever-narrower bandwidths as the technology made such narrowbanding feasible. Before Section 6103, the Commission had a since-repealed deadline of January 1, 2013 for narrowbanding from 25.0 kHz down to 12.5 kHz, with plans to eventually require narrowbanding to 6.25 kHz.

Keep in mind that, prior to Section 6103, many agencies were poised to invest in narrowbanding to 12.5 kHz. Some, like Burbank and its fellow members of ICIS, have already

achieved the mandate. It may yet be possible to re-establish this momentum toward narrowbanding – this time for 6.25 kHz.

As had occurred when the 12.5 kHz narrowbanding deadline was in effect, several commercial enterprises elected to donate their licenses to public agencies. For example, owners of old radio dispatch systems, now made obsolete by cell phones, may elect to take a tax write off rather than bear the expense of narrowbanding. Burbank believes donations like these might occur if the Commission were allowed to revive its narrowbanding goals.

Relocating users within a frequency band is a less daunting task than relocating them out of the band, particularly when the relocation frequencies are still undefined. Narrowbanding to 6.25 kHz would allow the Commission to embrace the much lesser challenge of relocating in-band.

Depending on the enterprises bidding for the freed-up portion of the T-Band, there may be appropriate spectrum freed up for eventual migration out of the T-Band, as well as the funds to support the migration. To use an example, there may be current users of the 700/800 MHz bands who may wish to migrate to the T-Band. If they won the auction for the freed up portions of the T-Band (owing to the narrowbanding to 6.25kHz equivalent, as described earlier), then there would be vacant spectrum (perhaps after some 700/800 MHz in-band migration) that could be held in reserve for future migration out of the T-band by current public safety users.

Speed up the engineering development of promising technologies (like LTE) to provide the ability to do mission-critical voice. Once achieved, capture this ability within an industry-wide standard and test this ability under *field* conditions. First responders need to create instant "situational awareness" by being able to instantly and simultaneously communicate

with large numbers (several dozen or more) of first responders during a major incident. This requirement alone distinguishes "mission-critical" voice radio communications from those that are non-critical. As compared with LMR (land/mobile radio) current broadband technologies (like VoLTE) cannot do this level of mission-critical one-to-many communications without requiring unreasonable set up time and excessive throughput delays. Also, the current VoLTE offerings need to concentrate on streaming options versus circuit-switch options, which result in the consumption of more spectrum.

Burbank's technical staff believes that the industry is able to develop software solutions could be developed that addresses this current-day VoLTE limitations. It is even possible that there may be preliminary-but-proprietary solutions in development.But absent federal encouragement, there may not be the economic incentive to develop (or implement) VoLTE-enabled one-to-many communications, a capability mainly of interest to first responders. The chance to occupy some of the T-Band spectrum earlier than expected (by making the T-band more efficient as described earlier) may provide one such incentive.

Based on the industry's experience with the development of P-25, Burbank believes the greatest investment of time may not lie with finding purely engineering solutions, but rather with in translating those solutions into a set of revised standards that all affected participants find to be workable and fair. Once industry acceptance is achieved, first responder acceptance will come from one or more successful trials under realistic field conditions. (First responders have learned from hard experience that what works in the lab may still fail in the field.)

Once the next-generation radio technology has been proven, assign the appropriate spectrum to accommodate it and be flexible in setting deadlines for public safety agencies

to migrate to it. Recall that earlier steps in this implementation path may have already (perhaps after some in-band rearrangements) freed up some spectrum.

A desirable goal could be assigning spectrum for mission-critical voice immediately next to the broadband spectrum, where an upgraded VoLTE technology could be used to best advantage. The Commission could do the spectrum assignments as soon as the technology is proven, well in advance of deploying set standards.

Different regions, and even agencies within regions, will have different exposure to stranded capital. To the extent that the Commission can be flexible and allow agencies to follow their own natural equipment replacement cycles, it can limit the cost impacts to the increment between replacement using T-Band and replacement using the new spectrum. Then it may well be that the proceeds of the T-Band auction will prove sufficient. In any case, these last implementation steps allow a second T-Band auction to take place, with the valuations benefitting from the results of the first T-Band auction.

CONCLUSION

Burbank urges the Commission and other policy makers to recommend the repeal of the current version of Section 6103 of the Middle Class Tax Relief and Job Creation Act of 2012 as it applies to the 470-512 MHz T-Band. Burbank urges the Commission and other policy makers to work toward a revised version of Section 6103 that 1) creates space on the T-band through continued narrowbanding, thereby allowing for new users to bid for the T-Band without needing to have existing T-Band users vacated; 2) thereby creates space in other frequency bands that can provide an eventual migration destination for current T-band users; 3) encourages the development of mission-critical voice capability that can be used within the broadband spectrum; 4) identifies new spectrum in advance of requiring migration to it; and 5) allows agencies to

migrate from the T-Band more closely in accordance with their natural equipment replacement cycles, thereby minimizing relocation expenses and maximizing net revenues from auctioning.

Respectfully submitted,

Gregory L. Simay,

Assistant General Manager,

Burbank Water and Power